

**AMENDMENTS TO THE SPECIFICATION:**

**Please amend the paragraph beginning at page 1, line 13, as follows:**

In optical transmission systems, the user traffic is carried by one or more channels traveling between a transmitter and a receiver in optical format. The receiver task is to convert the optical signal back into an electrical format and to extract the user signal. A channel is defined as a carrier wavelength modulated with a user signal. Ideally, a light pulse (representing a digital "1") is a surge of light of a certain power at wavelength  $\lambda_0$ ; in fact, the pulse of light has a certain "width" comprised of a small range of wavelengths about the central wavelength, so that a channel has a certain width as shown in Figure 1A.

**Please amend the paragraph beginning at page 4, line 28, as follows:**

a) The current networks have a point-to-point architecture that uses span equalization, so that the existing dispersion measuring methods can provide accurate dispersion measurements for a span, which is a relatively short ~~lengths~~ length of fiber (100-150km) and does not include optical amplifiers.

**Please amend the paragraph beginning at page 7, line 26, as follows:**

**Figure 3A** shows a plurality of eye diagrams for ~~[[the]]~~ a two-colour signal obtained from simulations for six detuning values;

**Please amend the paragraph beginning at page 9, line 7, as follows:**

An optical transmitter unit 2 located at the transmit node generates a two-colour optical signal 4. Transmitter unit 2 comprises a first optical source 1 for generating a first carrier wavelength  $\lambda_1$  and a second optical source 1' for generating a second carrier wavelength  $\lambda_2$ . Sources 1, 1' may be CW laser diodes or the like. The two wavelengths are combined in a

modulator 3 so that the bit patterns on both carrier fields are phase-synchronized. The combiner 12 can be any such well known device connected at the input of the modulator 3. The modulator can be a Mach-Zehnder; the modulating signal source is shown at 5. It is to be noted that ~~modulation~~ modulating signal source 5 and modulator 3 may realize any modulation format, amplitude, phase, frequency-shift keying (ASK, PSK, FSK) or any combinations of these.

**Please amend the paragraph beginning at page 13, line 20, as follows:**

Figure 5C shows the dispersion profile versus wavelength  $D(\lambda)$ , calculated as in EQ1 from a fit for the  $\tau(\lambda)$  dependency of Figure 5B. A second order polynomial fit for the  $\tau(\lambda)$  dependency can be determined from Figure 5B. Figure 2 shows generically block 22 that determines a, b and c from  $\tau(\lambda)$  graph 20. Block ~~[[20]]~~ 22 can be again a software module:

$$\tau(\lambda) = a + b(\lambda - \lambda_{ref}) + c(\lambda - \lambda_{ref})^2 \quad \text{EQ5}$$

HAYES SOLOWAY P.C.

130 W. CUSHING ST.  
TUCSON, AZ 85701  
TEL. 520.882.7623  
FAX. 520.882.7643

175 CANAL STREET  
MANCHESTER, NH 03101  
TEL. 603.668.1400  
FAX. 603.668.8567